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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,626	10/29/1999	CARL EKLUND	730.37246X00	6148

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EXAMINER	
TODD, GREGORY G	
ART UNIT	**PAPER NUMBER**
2157	

DATE MAILED: 08/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/429,626	EKLUND, CARL	
	Examiner	Art Unit	
	Gregory G Todd	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This is a third office action in response to applicant's amendment and request for continued examination filed, 03 May 2004, of application filed, with the above serial number, on 29 October 1999 in which claims 1, 6, 10-12, 17, and 21-23 have been amended. Claims 1-30 are therefore pending in the application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi et al (hereinafter "Takagi", 6,272,148) in view of Degermark et al (hereinafter "Degermark", IP Header Compression).

3. As per Claims 1 and 12, Takagi teaches a method of initiating compression of an IP header of each packet of a stream of packets to be sent from a source apparatus to a destination apparatus in a packet switched network, the source apparatus being connected to the packet switched network by a first node and the destination apparatus being connected to the packet switched network by a second node wherein Takagi teaches:

modifying, at the first node, the IP header of a full header packet of the stream of packets so that a destination address field of the IP header contains a second node address indicating a location of the second node, the second node address being different than a destination address indicating a location of the destination apparatus (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);

transmitting, from the first node to the second node, the full header packet including the modified IP header (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);

initiating at the first node header compression of IP headers of packets of the stream of packets subsequent to the full header packet, when the second node receives the full header packet including the modified IP header and the inserted routing header (at least col. 13, lines 15-26; Fig. 4; col. 23, lines 8-17).

Takagi fails to explicitly disclose inserting or modifying, at the first node, a routing header in the full header packet of the stream of packets, including context identification (CID) information identifying information of the IP header and the destination address indicating the location of the destination apparatus. Takagi does disclose inserting or modifying a link header on a higher layer being encapsulated to include the original destination (at least col. 22 line 66 - col. 23 line 44), which gives motivation to include the new IPv6 standard of including a routing header, specifically, to include CID information on the outermost layer to be examined first in the full header as disclosed in Degermark (at least Degermark pp. 6; pp. 16 - 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate and implement a new IP protocol standard with Takagi's header

compression because this would let it fit a new standard format of including a specific header for routing purposes so as packets could get routed more efficiently.

4. As per Claims 2 and 13.

each of the first and second nodes is a router (at least Fig. 11).

5. As per Claims 3, 7, 14, and 18.

compressing IP header of each of the subsequent packets (subsequent compressed tcp/ip header) when IP header compression has been initiated (at least Fig. 5).

6. As per Claims 4, 8, 15, and 19.

transmitting the subsequent packets including the CID information (link header) without an IP header (at least Fig. 4, 5).

7. As per Claims 5, 9, 16, and 20.

transmitting each of the subsequent packets including the CID information (link header) with a compressed IP header which includes unpredictable IP header information (at least Fig. 5).

8. As per Claims 6 and 17.

Takagi does not explicitly disclose storing information of the IP header of the full header packet as a context in corresponding relation to the CID information at the second node when the second node receives said full header packet including the modified IP header and the inserted routing header. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark.

Degermark teaches sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header (at least Degermark pp. 7, 8, 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's storing the IP information in relation to a specific context and CID because this would allow the original information stored in the IP header to be decompressed and utilized at the end-point, otherwise the original IP information including the destination address would not be known and used for the packet to reach it's final destination.

9. As per Claims 10 and 21.

Takagi does not explicitly disclose decompressing at the second node each of the subsequent packets by using the CID information included in the subsequent packet to refer to the stored context. However, the use and advantages for decompressing is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark teaches decompressing a header based on the last version of the header received (at least Degermark pp. 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's decompression so that the last incoming compressed header can be properly decompressed according to the latest context as the latest context could represent something having changed on the first node and therefore the packet can be decompressed accordingly and correctly.

10. As per Claims 11 and 22.

Takagi does not explicitly disclose transmitting, by the second node, the decompressed subsequent packets to the destination apparatus based on the destination address. However, the use and advantages for decompressing is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark teaches decompressing a header based on the last version of the header received (at least Degermark pp. 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's decompression so that the last incoming compressed header can be properly decompressed according to the latest context as the latest context could represent something having changed on the first node and therefore the packet can be decompressed accordingly and correctly.

11. As per Claim 23, Takagi teaches a router for use in a packet switched network for initiating compression of an Internet Protocol (IP) header of each packet of a stream of packets to be sent from a source apparatus to a destination apparatus in the packet switched network, wherein Takagi teaches:

first apparatus which modifies the IP header of a full header packet of the stream of packets so that a destination address field of the IP header contains an address indicating a location of another router, the address being different than a destination address indicating a location of the destination apparatus (at least col. 25, lines 30-38; col. 26, lines 1-10; Fig. 4);

third apparatus which transmits to the another router the full header packet including the modified IP header and the inserted routing header to initiate header compression of the IP header of each packet of the stream of packets subsequent to the full header packet being initiated upon receipt in the another router of the full header packet including the modified IP header and the inserted routing header (at least col. 25, lines 30-38; col. 26, lines 1-10; col 13, lines 15-26; Fig. 4).

Takagi fails to explicitly disclose a second apparatus which inserts a routing header in the full header packet of the stream of packets, the routing header having context identification (CID) information identifying information of the IP header in the destination address indicating the location of the destination apparatus. Takagi does disclose inserting or modifying a link header on a higher layer being encapsulated to include the original destination, which gives motivation to include the new IPv6 standard of including a routing header, specifically, to include CID information on the outermost layer to be examined first in the full header as disclosed in Degermark (at least Degermark pp. 6; pp. 16 - 17). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate and implement a new IP protocol standard with Takagi's header compression because this would let it fit a new standard format of including a specific header for routing purposes so as packets could get routed more efficiently.

12. As per Claim 24.

fourth apparatus which compresses the IP header of each of the subsequent packets (subsequent compressed tcp/ip header) when IP header compression has been initiated (at least Fig. 5).

13. As per Claim 25.

fifth apparatus which transmits the subsequent packets including the CID information (link header) without an IP header (at least Fig. 4, 5).

14. As per Claim 26.

sixth apparatus which transmits each of the subsequent packets including the CID information (link header) with a compressed header which includes unpredictable IP header information (at least Fig. 5).

15. As per Claim 27.

Takagi does not explicitly disclose a seventh apparatus which stores information of the IP header of the full header packet as a context in corresponding relation to the CID information. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark teaches sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header (at least Degermark pp. 7, 8, 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's storing the IP information in relation to a specific context and CID because this would allow the original information stored in the IP header to be decompressed and utilized at the end-point, otherwise the original IP information including the

destination address would not be known and used for the packet to reach it's final destination.

16. As per Claim 28.

eighth apparatus which compresses the IP headers of each of the subsequent packets (subsequent compressed tcp/ip header) when the IP header compression has been initiated (at least Fig. 5).

17. As per Claim 29.

Takagi does not explicitly disclose a ninth apparatus which stores information of the IP header of the full header packet in corresponding relation to the CID information in response to receipt of the full header packet including the modified IP header and the inserted router header from the another router. However, the use and advantages for storing the IP header of the full header packet is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark teaches sending a full header packet and a non-TCP CID being associated with a context respective to a non-TCP header to initiate compression upon receipt of a full header packet containing a CID (at least Degermark pp. 7, 8, 23). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's storing the IP information in relation to a specific context and CID and initiating compression on receipt of a full header CID because this would allow the compression to begin by being notified from a full header, since the second node would not have a CID to decompress the packet with if a first full packet containing the CID were not sent first.

18. As per Claim 30.

Takagi does not explicitly disclose a tenth apparatus which decompresses packets subsequent to the full header packet according to the stored CID information. However, the use and advantages for decompressing is well known to one skilled in the art at the time the invention was made as evidenced by the teachings of Degermark. Degermark teaches decompressing a header based on the last version of the header received (at least Degermark pp. 6). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of Degermark's decompression so that the last incoming compressed header can be properly decompressed according to the latest context as the latest context could represent something having changed on the first node and therefore the packet can be decompressed accordingly and correctly.

Response to Arguments

19. Applicant's arguments filed 03 May 2004 have been fully considered but they are not persuasive. Applicants argue, substantially, that there is no suggestion or teaching in Takagi for anything related to modifying an IP header, including modifying the destination address field of an IP header to contain a second node address; that Takagi does not teach initiating at a first node, header compression.

In response to applicant's argument that Takagi does not disclose modifying the destination address of an IP header, as the claim language reads, modifying...so that a destination address field of the IP header contains a second node address indicating a

location of the second node. This is clearly taught by Takagi. The claim language of modifying merely suggests any sort of modification to the IP address to indicate a different (second) node as the new destination. As previously stated, Takagi discloses a tunneling technique (at least col. 25 line 30 - col. 26 line 8; Fig. 12, 13) wherein a radio terminal, acting as the new 'second' node, is written to the destination address of the IP header, thereby indicating in the IP header the location of the radio terminal, such encapsulation of the new destination in the header thus being modified for a new and different destination.

In response to applicant's argument that Takagi does not disclose initiating header compression, Takagi teaches his IP datagram segmentation unit 303 having a TCP/IP header compression function to compress the header and improve the performance of the TCP (See col. 23, lines 8-16). Takagi further discloses the types of header compression being used such as SLIP and PPP and the effectiveness of using compression for paths with narrow bandwidth (See col. 13, lines 15-26).

Conclusion

20. Newly cited Birdwell et al, Jonsson et al, Huang, and Koodli in addition to previously cited Bestavros et al, Cisneros et al, Walker, Kumar et al, Taglione et al, Brendel et al, Slane, Callon, Deering et al, Balakrishnan et al and Degermark et al are cited for disclosing pertinent information related to the claimed invention. Applicants are requested to consider the prior art reference for relevant teachings when responding to this office action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory G Todd whose telephone number is (703)305-5343. The examiner can normally be reached on Monday - Friday 9:00am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on (703)308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory Todd

Patent Examiner

Technology Center 2100

SALEH NAJJAR
PRIMARY EXAMINER